

AMENDMENTS TO THE CLAIMS:

1. (Currently amended) An optical device comprising

- an anode;

- a cathode comprising barium, strontium or calcium; and

- a layer of solution processable organic semiconducting material copolymer comprising triarylamine repeat units between the anode and the cathode; and

wherein - a layer of cross-linked hole transporting and electron blocking material is located between the anode and the layer of organic solution processable semiconducting material copolymer,

wherein the molar ratio of triarylamine repeat units in the copolymer is between 1% and 10%.

2. (Previously presented) An optical device according to claim 1 that is an electroluminescent device.

3. (Currently amended) An optical device according to claim 2 that is a full color device wherein the layer of organic semiconducting material copolymer comprises red, green and blue electroluminescent materials.

4. (Previously presented) An optical device according to claim 1 wherein the cathode comprises barium.

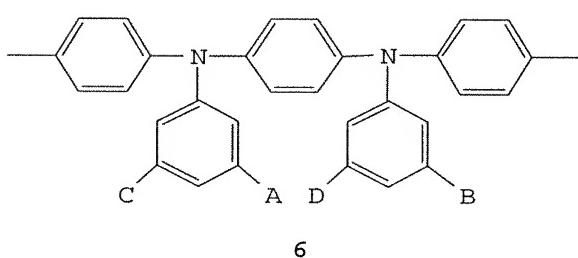
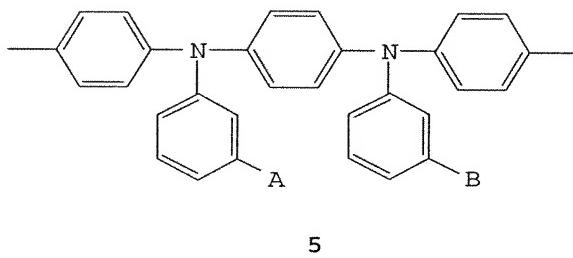
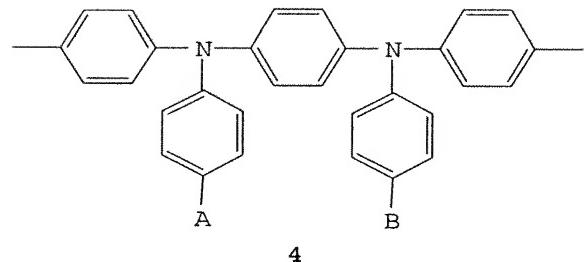
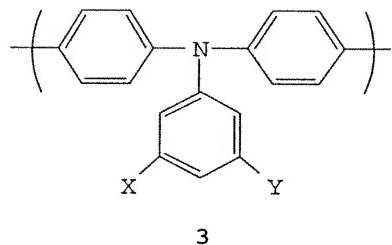
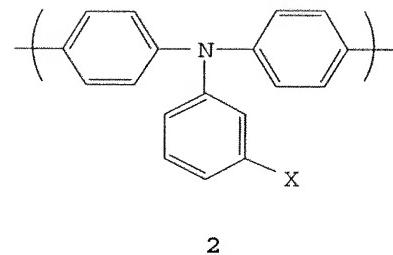
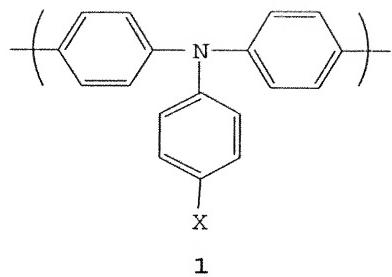
5. (Previously presented) An optical device according to claim 1 wherein the layer of cross-linked hole transporting and electron blocking material comprises a triarylamine.

6. (Currently amended) An optical device according to claim 5 wherein the triarylamine of the cross-linked hole transporting and electron blocking material is provided as repeat units of a polymer.

7. (Previously presented) An optical device according to claim 6 wherein the polymer is a copolymer comprising one or more arylene co-repeat units.

8. (Previously presented) An optical device according to claim 7 wherein at least one of the arylene co-repeat units is selected from the group consisting of optionally substituted fluorene, spirofluorene, indenofluorene and phenylene.

9. (Currently amended) An optical device according to claim 6 wherein the triarylamine repeat unit of the cross-linked hole transporting and electron blocking polymer is selected from the group consisting of repeat units of formulae 1-6:

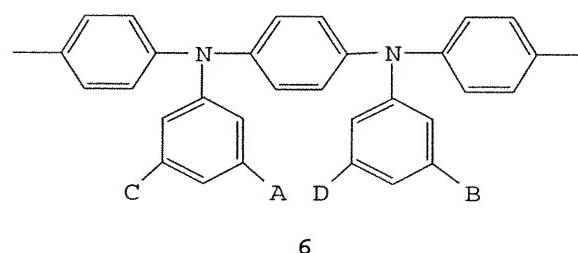
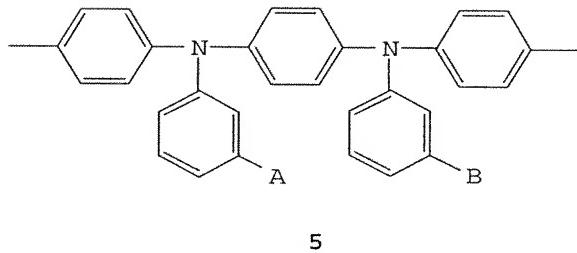
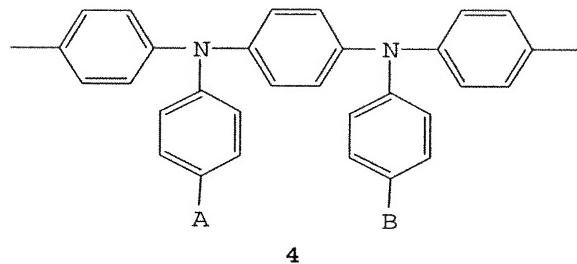
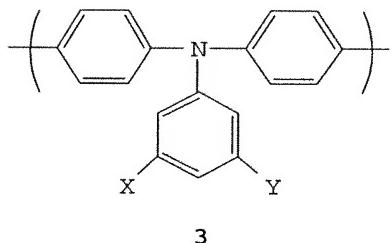
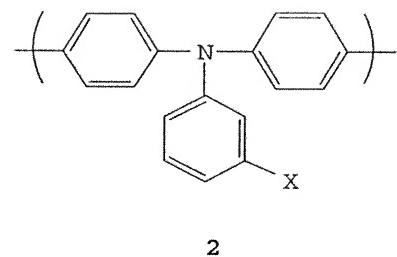
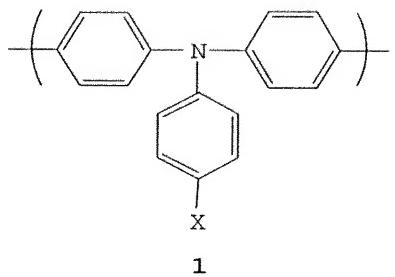


wherein X, Y, A, B, C, and D are independently selected from H or a substituent group.

10. (Cancelled)

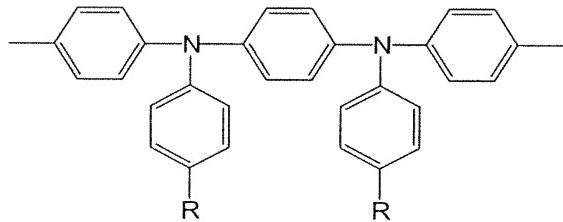
11. (Currently amended) An optical device comprising a semiconducting copolymer according to claim [[27]] 1 wherein the semiconducting copolymer comprises repeat units selected from the group consisting of optionally substituted fluorene, spirofluorene, indenofluorene and phenylene.

12. (Currently amended) An optical device comprising a semiconducting copolymer according to claim [[10]] 1 wherein said polymer is a semiconducting copolymer comprising comprises a repeat unit selected from triarylamine repeat units of formulae 1-6:



wherein X, Y, A, B, C, and D are independently selected from H or a substituent group.

13. (Previously presented) An optical device according to claim 12 wherein said copolymer comprises at least one co-repeat unit comprising a repeat unit of formula (I):



wherein each R is independently selected from the group consisting of H or optionally substituted, branched or linear alkyl, aryl, perfluoroalkyl, thioalkyl, cyano, alkoxy, heteroaryl, alkylaryl and arylalkyl groups.

14. (Canceled)

15. (Previously presented) An optical device according to claim 1 wherein a layer of hole injecting material is located between the anode and the layer of hole transporting and electron blocking material.

16. (Previously presented) An optical device according to claim 15 wherein the layer of hole injecting material is poly(ethylene dioxythiophene).

17. (Previously presented) An optical device according to claim 1 wherein the cathode comprises elemental barium.

18. (Withdrawn) A method of forming an optical device comprising
- providing a substrate comprising an anode;
- depositing a layer of hole transporting and electron blocking material onto the anode;
- depositing a layer of organic semiconducting material over the layer of hole transporting and electron blocking material; and
- depositing a cathode comprising barium, strontium or calcium over the layer of organic semiconducting material.

19. (Withdrawn) A method according to claim 18 comprising depositing a layer of hole injecting material between the anode and the layer of hole transporting and electron blocking material.

20. (Withdrawn) A method according to claim 18 comprising depositing both the layer of hole transporting and electron blocking material and the layer of organic semiconducting material from solution.

21. (Withdrawn) A method according to claim 20 wherein both the layer of hole transporting and electron blocking material and the layer of organic semiconducting material are polymers.

22. (Withdrawn) A method according to claim 20 comprising subjecting the hole transporting and electron blocking layer to heat treatment prior to deposition of the organic semiconducting material.

23. (Withdrawn) A method according to claim 22 wherein the heat treatment is below the glass transition temperature of the hole transporting and electron blocking material.

24. (Withdrawn) A method according to claim 20 wherein the organic semiconducting material is substantially free of cross-linkable vinyl or ethynyl groups

25. (Previously presented) An optical device according to claim 7 wherein at least one of the arylene co-repeat units is 9,9-disubstituted fluorene-2,7-diyl.

26. (Previously presented) An optical device according to claim 9, wherein at least one of X, Y, A, B, C, and D is independently selected from the group consisting of optionally substituted, branched or linear alkyl, aryl, perfluoroalkyl, thioalkyl, cyano, alkoxy, heteroaryl, alkylaryl and arylalkyl groups.

27. (Canceled)

28. (Previously presented) An optical device according to claim 11 wherein the repeat units comprise 9,9-disubstituted fluorene-2,7-diyl.

29. (Currently amended) An optical device [[of]] according to claim 13 wherein at least one R is a C₁₋₁₀ alkyl group.

30. (Currently amended) An optical device [[of]] according to claim 13 wherein at least one R is a butyl group.

31. (Canceled)

32. (Canceled)